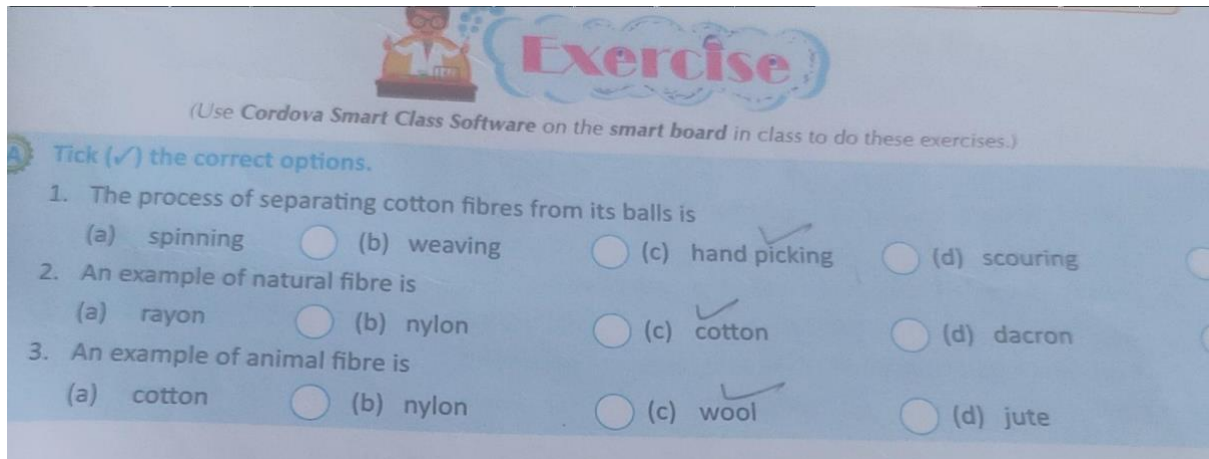


Subject – Science

Class- 6

Topic – chapter-4 Natural fibre



Exercise

(Use Cordova Smart Class Software on the smart board in class to do these exercises.)

A Tick (✓) the correct options.

1. The process of separating cotton fibres from its balls is
(a) spinning ☐ (b) weaving ☐ (c) hand picking ☒ (d) scouring ☐
2. An example of natural fibre is
(a) rayon ☐ (b) nylon ☐ (c) cotton ☒ (d) dacron ☐
3. An example of animal fibre is
(a) cotton ☐ (b) nylon ☐ (c) wool ☒ (d) jute ☐

4. From whom the fibre of silk is obtained?
(a) sheep (b) goat

(c) wool

(d) silkworm ✓

Fill in the blanks

1. The process of making thread from fibre is called spinning.
2. The rearing of silk moth is known as sericulture.
3. The silkworms get wrap of silk fibre and form cocoon.
4. Nylon, rayon and dacron are examples of synthetic fibres.

Short answer type questions

1. Explain the difference between natural fibres and synthetic fibres. 34
2. Write any two significance of cotton fibre. 38, 39
3. In which state of our country is silk manufactured?
4. Explain the process of making thread from fibre.

Long answer type questions

1. List the name of clothes used in our daily life and write by which type of fibre they are formed of.
2. How is silk obtained from silkworm? Explain. 46, 47
3. Explain the process of obtaining wool from sheep. 39

Group activity

Do this group activity by making 4-6 groups according to the strength of your class and present in your class.

Group 1: explanation of animals for obtaining wool

Group 2: production of wool

Group 3: cloth from cotton plants

Group 4: obtaining silk cloth from silkworm

Group 5: list of natural and artificial fibre

Group 6: list of things formed from moonj

Practical Work

1. Draw a print on an unuseful cloth by making blocks of lady finger, potato and lotus in the presence of your teacher.
2. Visit to a weaving industry and observe the weaving process.
3. Find out which crop is grown for obtaining fibre and uses of this at your nearby place.
4. Collect knowledge about BT cotton from an agricultural scientist or visit:
envior.nic.in/divisions/csnv/btcotton/bgnote.pdf.

ADDITIONAL QUESTIONS FOR PRACTICE

A Tick (✓) the correct options.

1. Which of the following are plant fibres?
(a) cotton (b) jute (c) moonj (d) all of these ✓
2. Which of the following is also called 'golden fibre'?
(a) wool (b) jute ✓ (c) cotton (d) none of these
3. From which part of the jute plant, jute fibres are obtained?
(a) seed (b) stem ✓ (c) flower (d) fruit wall

4. Takli and charkha are the devices used for

☒ (a) spinning

☐ (b) ginning

☐ (c) weaving

☐ (d) knitting

B Fill in the blanks.

1. Fibres are long, strong and flexible thread-like materials.
2. A machine called roller gin is used for ginning.
3. Dyes are special chemical substances that colour the fabric.
4. Silk fibre is obtained from the cocoon of the silkworm.
5. The process of arranging two sets of yarns together to make a fabric with the help of a handloom or powerloom is called weaving.

C Short answer questions

1. Name two synthetic fibres. Nylon, polyester
2. For what purpose, moonj fibres are used? to make ropes, coats, chairs
3. Which type of wool is better— wool with fewer burrs or wool with more burrs?
4. What are animal fibres? Give two examples. 39
5. What are mixed fibres? Give two examples. 34
6. Why does shearing not hurt the sheep? 39

D Long answer questions

1. Write the uses of cotton and jute. 35, 36
2. Describe the process of conversion of cotton fibres into fabric.
3. How is block printing done?
4. Draw a labelled diagram showing the life cycle of a silk moth and describe it. 41

E Think and answer

EX-2-D Name of clothes	Type of fibre
(i) Sweater	Wool
(ii) Shirt	Cotton / Nylon / Polyester
(iii) Sari	Sari / Silk / Rayon
(iv) Socks	Wool / Nylon / Cotton
(v) Pants	Cotton
(vi) Skirts	Wool / Silk

Chapter 4: Natural Fibres

Multiple Choice Questions

Page No. 35

1. (d) 2. (d)

Multiple Choice Questions

Page No. 36

1. (a) 2. (b)

Multiple Choice Questions

Page No. 39

1. (c) 2. (b)

Multiple Choice Questions

Page No. 42

1. (d) 2. (d) 3. (b)

EXERCISE

A. Tick (✓) the correct options.

1. (c) 2. (c) 3. (c) 4. (d)

B. Fill in the blanks.

1. spinning 2. sericulture
3. pupa 4. synthetic

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SCIENCE-6

C. Short answer type questions

1.

Natural Fibres	Synthetic fibres
The fibres obtained from plants and animals are called natural fibres.	The fibres made by humans from different chemicals in the industries are called human-made or synthetic fibres.
Cotton, jute and wool are some examples of natural fibres.	Nylon, terylene and polyester are some examples of synthetic fibres.
2. Significance of cotton fabric is as follows:
 - (i) It is comfortable in hot and humid conditions. It absorbs sweat and lets the air in. The sweat absorbed by cotton fabric evaporates more quickly and results in the cooling of the body.
 - (ii) It can easily be dyed in different colours.
 - (iii) It does not cause any allergic reaction to the skin. (any two)
3. In India, 90% of the silk production is done in Karnataka, Andhra Pradesh and Tamil Nadu.
4. The process of changing fibre into yarn (thread) is called spinning. Spinning draws out short fibres from the cotton wool and twists them together into a long, continuous thread called yarn. This increases the strength of the fibre. Spinning machines are used for spinning yarn on a large scale.

D. Long answer type questions

1.

S.No.	Name of clothes	Type of fibre
(i)	sweater	wool
(ii)	shirts	cotton/nylon/polyester/terrywool
(iii)	sari	cotton/silk/rayon
(iv)	socks	wool/nylon/cotton
(v)	pants	cotton/polyester/nylon
(vi)	skirts	cotton/silk/rayon
2. The process of obtaining silk from silkworms involves the following steps:
 - (i) **Development of cocoon by silkworm:** When silkworms hatch out of the eggs, they feed on mulberry leaves for about 25 to 30 days. They are then moved to a tiny chamber in the bamboo tray to spin cocoons. A silkworm completes its cocoon in about five days by producing 600-1200 metres of thin silk fibre.
 - (ii) **Boiling:** The cocoons are first boiled in hot water or treated with hot air in ovens to kill the larvae inside it. The hot water softens the silk gum, sericin, so as to allow the unwinding or reeling of silk fibre as one continuous thread.

- (iii) **Reeling:** The process of taking out threads from the cocoon (for use as silk) is called reeling the silk. Reeling is done in special machines that helps to unwind the threads or fibres of silk from the cocoon.
 - (iv) **Throwing:** The raw silk is twisted to produce thrown silk. The process is called throwing. This prevents the silk from splitting into individual fibres.
 - (v) **Dyeing:** Thrown silk is then dyed for making coloured fabrics. The dyed silk fibres are then spun into silk threads, which are woven into silk cloth by weavers.
3. The process of obtaining wool from the sheep involves the following steps:
- (i) **Shearing:** The fleece (coat of wool) of sheep along with a thin layer of skin is peeled from the body of sheep. It is done manually with a large razor or with an electrically-driven shearing machine. The process of removing hair from the body of a sheep is called shearing.
 - (ii) **Scouring:** The fleece of sheep contains dust, dirt, sweat, vegetable matter and grease which is thoroughly cleaned by washing with soap (or detergent) and a lot of water in a tank. This process is called scouring.
 - (iii) **Sorting:** After scouring, the wool is separated or sorted according to the texture and types i.e., fineness, length and colour. Only fleece of long, fine quality is sent to the factory for further processes. This process is called sorting.
 - (iv) **Combing:** The fleece is then combed to remove the burrs (tiny knots). The fewer the burrs, the better is the wool. The process of removing the burrs from the fleece is called combing. The fibres are straightened in this step.
 - (v) **Dyeing:** The fibres obtained after combing are dyed in various colours and this process is called dyeing.
 - (vi) **Spinning:** The straightened fibres are spun together to make yarn. This yarn is then either knitted or woven into wool.

E. Group activity

Teacher may help the students to perform this group activity.

F. Practical Work

1. Teacher/Parents may help the students to do this practical work.
2. Teacher/Parents may help the students to do this practical work.
3. Teacher/Parents may help the students to do this practical work.
4. Teacher/Parents may help the students to do this practical work.

ADDITIONAL QUESTIONS FOR PRACTICE

A. Tick (✓) the correct options.

1. (d) 2. (b) 3. (b) 4. (a)

B. Fill in the blanks.

1. Fibres 2. roller gin 3. fabric 4. cocoon 5. weaving

C. Short answer questions

1. Nylon, terylene, polyester, acrylic (any two)
2. Moonj fibres are mainly used to make ropes. These ropes are then used to make coats, chairs and decorative items.
3. Wool with fewer burrs is better.
4. The fibres obtained from animals are called animal fibres. Wool and silk are common examples of animal fibres.
5. The fibres made by blending natural fibres with synthetic fibres to obtain superior and more useful fibres are called mixed fibres. Terrywool (terylene + wool) and terrycot (terylene + cotton) are the examples of mixed fibres.
6. Shearing does not hurt the sheep because the uppermost layer of the skin of sheep is dead.

skin of sheep is dead.

D. Long answer questions

1. Uses of Cotton:

- (i) Cotton fibres are used for manufacturing clothes like socks, T-shirts and bed sheets. It is also used for making mattresses, quilts and pillows.
- (ii) Cotton is blended with other fibres to make mixed fibres like terrycot.
- (iii) It is used to absorb blood and pus from wounds and in other medical procedures.

Uses of jute:

- (i) It is used for making gunny bags or sacks.
- (ii) High quality jute is woven into curtains, carpets, chair coverings and packing for linoleum.
- (iii) Shopping bags, table mats, jute beads and jewellery are also made up of jute.

2. The process of conversion of cotton fibres into cotton fabric involves the following steps:

- (i) **Ginning:** The cotton fibres are separated from their seeds by the process called ginning. It was traditionally done by hands using steel combs. These days, a machine called 'roller gin' is used for ginning.

- (ii) **Spinning:** The process of changing fibre into yarn is called spinning. Spinning draws out short fibres from the cotton wool and twists them together into a long, continuous thread called yarn. Hand spindle or *takli* and *charkha* are used for spinning.

- (iii) **Weaving:** It is the process to convert yarn into cloth. The process of arranging two sets of yarns together to make a fabric with the help of a handloom or powerloom is called weaving. Weavers weaving on a small scale, use handlooms and those weaving on a large scale, use powerlooms.

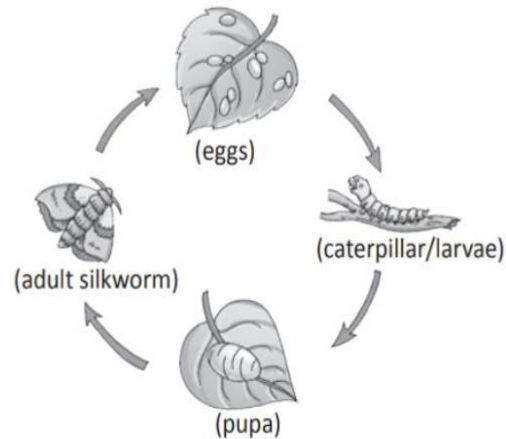
- (iv) **Dyeing (colouring) of fabrics:** Cotton fabric obtained is of white colour. Various types of dyes are used to dye cotton fabric in beautiful colours and this process is called dyeing.

3. The wooden or metallic blocks (called impression blocks or *bhant*) of different shapes and sizes having beautiful designs are used for block printing. Block printing is done on the washed fabric from left to right in the following steps:

- (i) Desired colours for printing are prepared by mixing particular coloured dye in a container.
- (ii) This colour is poured on a sponge.
- (iii) Now, printing block (*bhant*) is kept on the sponge so that it absorbs the extra colour.

Block printing is done on the whole fabric or on the margins (border) of the fabric.

4. Life cycle of a silk moth



- (i) The female silk moth lays pale yellow eggs on the leaves of a tree (such as mulberry tree).
- (ii) The eggs hatch in two weeks to form worm-like larvae called

‘caterpillars’ or ‘silkworms’. The silkworms feed on the leaves of mulberry tree and grow bigger in size.

- (iii) The silkworm develops into a pupa. It begins spinning a cocoon by moving its head in the pattern of figure of eight (8) and secretes silk in liquid form through the tiny opening in its head. Liquid silk is coated in sericin (a water-soluble protective gum) and solidifies on contact with the air and becomes silk fibre which is used by silkworms to cover itself completely. The silky covering spun by the silkworm for its protection is called a cocoon.
- (iv) When the pupa (enclosed in cocoon) develops fully to form an adult silk moth, then the cocoon splits up and a beautiful silk moth comes out. Adult silk moth lives only for a few days.